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ABSTRACT

This action research paper describes a program initiated by teacher researchers to improve academic achievement and interest in social studies. The targeted group consisted of fifth graders in a lower middle class community in the Midwest. Analysis of the problem-causes data show three main factors: curriculum, attitude, and effect. In regard to curriculum, the study shows that: (1) the curriculum does not fit the multiple intelligences (MI); (2) many teachers do not want to change or are not trained in teaching using the MI; and (3) there is a lack of authentic assessment readily available to teachers. The second factor is attitude. Teachers teach using their strongest biases, and the Western education system emphasizes math and verbal education. The third factor is effect. Students were not using what they have learned or their full potential, and many teachers were unaware of their students' talents. The literature review of instructional solutions named these categories: Instructional, Behavioral, and Interest. The researchers focused on the MI solution, specifically, the intervention of the MI approach to social studies. The intervention occurred from September 2001 to December 2001. Fifth graders would increase student achievement and interest, by participating in multiple intelligence activities. Evaluation was by pre- and post-tests, and surveys. Results showed that interest in social studies increased 11% as evidenced by the student observation checklist and the climate surveys. Average achievement grade on the post-test in the experimental class was 77% as opposed to the control classroom's average grade of 70%. Appended are: Parent Letter; Consent to Participate; Social Studies Pre-/Post-Interest Survey; Seven Multiple Intelligences Quiz; Scoring of the Quiz; Native American Test: You Know about Native Americans Test; and Multiple Intelligence Survey. (Contains 24 references, 7 figures, and 8 tables.) (Author/BT)

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# IMPROVING STUDENT INTEREST AND ACHIEVEMENT IN SOCIAL STUDIES USING A MULTIPLE INTELLIGENCE APPROACH

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## ABSTRACT

This action research paper describes a program initiated by teacher researchers for the purpose of improving academic achievement and interest in social studies. The targeted group consisted of fifth graders in a lower middle class community in the Midwest.

The analysis of the problem causes data shows three main factors: curriculum, attitude, and effect. In regard to curriculum, the study shows: that the curriculum does not fit the multiple intelligences (MI), that many teachers do not want to change or are not trained in teaching using the MI, that there is a lack of authentic assessment readily available to teachers. The second factor is attitude. Teachers teach using their strongest biases and the Western education system emphasizes math and verbal education. The last factor is effect. Students are not using what they have learned or their full potential, and many teachers are unaware of their student's talents.

The literature review of instructional solutions named these categories: Instructional, behavioral, and interest. These researchers focused on the solution of MI, specifically, the intervention of the MI approach to social studies. The intervention will take place during the period of September 2001 to December 2001. Fifth graders will increase student achievement and interest, by participating in multiple intelligence activities. It will be evaluated by pre and post-tests, and surveys.

The results show that interest in social studies has increased 11% as evidenced by the student observation checklist and the climate surveys. The average achievement grade on the post-test in the experimental class was 77% as opposed to the control classroom's average grade of 70%.

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# CHAPTER 1

# PROBLEM STATEMENT AND CONTEXT

## General Statement of the Problem

Teaching strategies in social studies address only two intelligences, mathematical logical and verbal linguistic. Consequently targeted fifth grade students demonstrate a lack of interest and low academic scores in social studies. Evidence of this existing problem is low test scores, lack of teaching strategies embodying the multiple intelligences and low interest.

## Immediate Problem Context

The targeted elementary school consists of kindergarten through sixth grade students and is located in a mid-western suburb. The school has provided educational services to the area since 1961. The one story brick building is housed on three acres of land. The school is divided into two wings, the primary and intermediate. There are 18 classrooms, an art room, library, a computer lab with 35 computers, a gymnasium, a multi-purpose room (used for lunch and school assemblies), and several other smaller rooms. In 2000 two additional classrooms were added in the form of mobiles in the rear of the school. These mobiles house a fourth grade class and one intermediate ESL(English as a Second Language) class. The school surrounding grounds include a community of homes, a large open field, basketball hoops, and two playground areas.

The total student population is 437. The students are from varying backgrounds: 53.3% Caucasian, 5.8% African-American, 20.4% Mexican-American, 20.4% Asian/Pacific Islander. The majority of these students come from lower middle class income families, with 30.7% coming from low-income families.

The school day begins at 8:00 a.m. and ends at 2:00 p.m. The attendance rate is 95.2 %, the mobility rate is 25.1% and the chronic truancy is at 2.1%. Of the 437 students that attend the school, 247 are bused. The average class size for the kindergarten is 19 students, first grade 26, second grade 16, third grade 18.3, fourth grade 25.5, fifth grade 23.5, and sixth grade 27 students.

Each classroom is equipped with one computer, a printer, a 27" television, VCR (video cassette recorder), three chalkboards, five bulletin boards, an intercom system, one sink, a drinking fountain, a heating unit, one ceiling fan, an American Flag, 18 cabinets, 14 shelves, two closets, and one bathroom in every primary classroom. All but one classroom contain windows. In addition to basic academic classes, the school has a fine arts program that offers physical education, art, and music to the students once a week.

The administrative staff is composed of one principal. There are 46 staff members; 20 of these are classroom teachers (19 female and one male) with 12 average years of experience. Thirty-six percent of the teachers have a Master's degree and 2% have a Master's degree plus hours. The special service staff consists of a part-time school nurse, a speech and language therapist, a psychologist, a social worker, a social work intern, two teachers for behaviorally disturbed (BD) students, two resource teachers for learning disabled (LD) students. There is also an (ESL) program housed in this elementary school. The program has a staff of five teachers and five teaching assistants.

This school offers many special programs to the student population. Programs include: after school academy (extra-curricular activities), Peer Mediators, DARE (Drug Awareness Resistance Education), Rainbows, First Steps, PAL (Project Accelerated Literacy) band, chorus, a school store, and B.O.B. (Battle of the Books).

## The Surrounding Community

The unit school district has a population of 37,705 students who attend 38 elementary schools (kindergarten through sixth grade), seven middle schools and three high schools. It consists of nine separate communities that cover a 90 square mile boundary that extends into three counties.

The school district is overseen by a superintendent. There are four area superintendents that are under his administration. The area superintendents are responsible for a group of schools and the principals. The principals are in charge of the daily running of the school.

The student population of the district includes a variety of ethnic and cultural backgrounds including: 56.68% Caucasian, 29.19% Hispanic, 7.46% African-American, 6.56% Asian American, and 11% Native American. The instructional expenditure per pupil in this district is $4,344, and the operating expenditure per pupil is $6,953.

The unit school district has 2,644 teachers. The district spends 70.3% on education, 5.1% on operations and maintenance, 4.4% on transportation, 6.3% on bond and interest, 2.3% on municipal retirement/social security and, 11.6% on site and construction/capital improvement.

This particular site's population comes mainly from one of the nine surrounding communities, with ESL students coming from all of the nine communities. This is because this elementary school is the only one in the district that accommodates the ESL students. The

community's population is 35,579. This community boasts the youngest residents with a median resident age of 28. The median family income is $49,916 and the average home value is listed at $101,000. The community administration consists of a mayor and six trustees, and is serviced by one park district. Also included is a large recreational facility that offers many different types of programs to the residents in the district. The area can be described as a family community, mainly residential with many franchise businesses and restaurants. Business industry in this area is considered strong. This community was established in the 19th century. It has eight churches of various denominations, a library, many community organizations and is fully incorporated.

This site is affiliated with several resources in the community. Included is a Grandparents Program that meets twice per month. Grandparents come to the school and help out in each of the classrooms. Another partnership is with a local gasoline service. This station allows one-half cent per gallon pumped on every Tuesday of the month to be donated to the school. Several of the parents are very active in and supportive of the school committees. These committees include PAC (Parent Advisory Committee), and a parent/teacher organization.

## National Context of the Problem

"During the past century, there has been considerable movement on the intelligence front, and this trend shows no sign of abating" (Gardner, 1983, pg. 1). The term intelligence has been used in several ways throughout history. Most people have used the word to describe the mental power of themselves and others. People are also considered intelligent if they are wise, eloquent, or quick witted.

The IQ test has also become an important part of American society. IQ's can be

measured and scored by a single number. The problem with using "standardized measures of intelligence such as the IQ score is that it measures a static quantity of intelligence present at birth, and that claims to indicate achievement potential" (Weber, 1996, pg. 3). Unfortunately, schools in the United States are guilty of using this system.

Students in American schools have difficulty understanding what they have learned. They can remember facts, but they can't think critically or creatively. Gardner points out that "Schools system often focus on a narrow range of intelligence that involves primarily verbal-linguistic and mathematical- logical skills"(Weber, 1992, p.2). Students who demonstrated proficiency in these two intelligences are at the head of the class, while students who are strong in others fall behind. Gardner also states that "it makes little sense to treat everyone in a one-size- fits- all manner"(Gardner & Veenama, 1996, p. 2). Children seldom learn well in conventional classrooms. If they are put in remedial programs, they will usually continue to fail because they get more of the same teaching approaches that were wrong from the start.

Using different modalities is vital to the learning process. Classroom teachers tend to spend a large amount of time on traditional book and paper -and –pencil tasks instead of teaching in a way that could engage the students in active learning. When teachers do involve their students in active learning by using multiple intelligence, they tend to focus on the modality that the teacher is comfortable with. However, this is not always comfortable for all the students.

Teachers will also use a type of teaching called whole- group instruction. This involves all the students doing the same task at the same time. Unfortunately, this form of instruction is one of the least effective. Children are diverse in their needs and intelligences and should have the opportunity to learn by using a learning style in which they're comfortable. Robert Sternberg

and Todd Lubart maintain, "Rather than put obstacles in their paths, let's do all that we can to value and encourage the creativity of the students in our schools"(Weber, 1992, p. 2).

The education system is not the only factor in determining what type of intelligence is important. The culture as a whole favors certain intelligences. North American culture favors verbal- linguistic and logical- mathematical and plays down others such as kinesthetic. These biases have a strong effect on the culture of the schools. They can limit such things as assessments, instructional strategies, and how intelligence is measured. Gardner argues that "Western civilization has crafted a curriculum approach that limits intellectual growth for the majority of the students. That is, too many intelligent students are forced to under- achieve since no provision to educate their particular intelligence appears to exist"(Weber, 1992, p. 2).

Heredity and genetics also play a part in each person's intelligence. Even before birth, each person has a predisposition to intelligence.

> The human being is more than their intellectual powers. Perhaps more crucial than intelligence in the human firmament are motivation, personality, emotions, and will. If we are ever to obtain a comprehensive and fully integrated picture of human beings, we need to mold our insights in respect to these other aspects of the human being (Gardner, 1991, pg. 4).

The concept of intelligence has developed and reformed throughout history. Education in North America has focused on only a few of the intelligences. If educators find ways to teach to the students' strongest intelligences, the students could have more success in school.

# CHAPTER 2

## PROBLEM DOCUMENTATION

### Problem Evidence

In order to document the students' lack of interest and low scores in social studies, the teacher-researchers administered a student pre-interest survey and examined the fourth grade report cards of the current fifth grade classes. In order to document the teacher's lack of addressing all intelligences in their teaching strategies, a teacher survey was conducted (Appendix A). The pre-interest survey was given the second week of school to the targeted fifth grade, the experimental group (class A) and the control group (class B).

Class A contains 27 students and class B has 25 students. This survey contained 17 questions regarding the students' interest in learning, typical ways of learning, individual learning, partner learning, cooperative, and hands-on learning. Each student was asked to respond with agree neutral or disagree. In order to document teacher's lack of addressing all intelligences in their teaching strategies, a teacher survey was conducted (Appendix A).

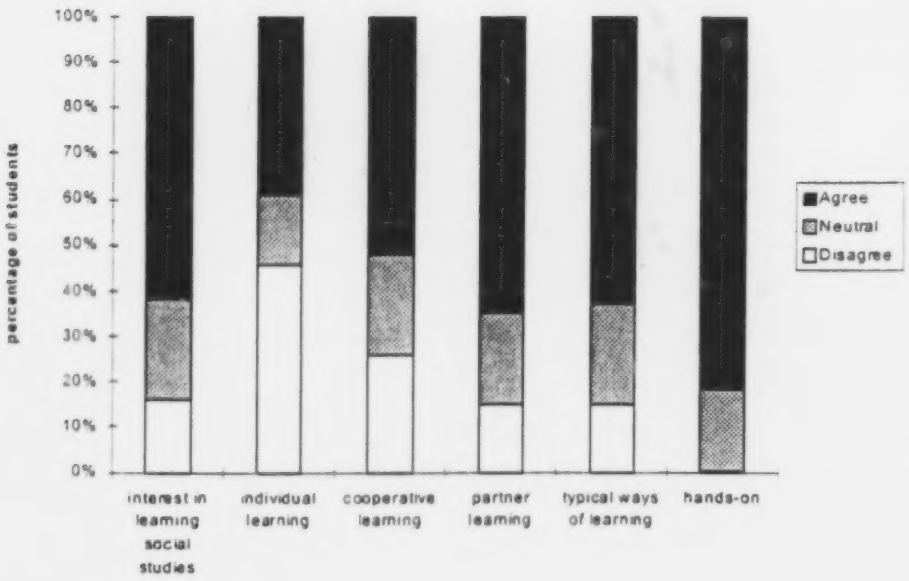


Figure 1. Social studies pre-interest survey for class A, which has twenty-seven students.

Figure 1 illustrates the students' agree, neutral, and disagree responses listed as percentages. An analysis of Figure 1 indicates that at class A, 62% of the students have an interest in social studies, 22% of the students are neutral as to their interest in social studies, and 16% of the students have little or no interest in social studies. In class A, 39% of the students like the typical ways of learning, 15% of the students are neutral, and 46% do not like typical ways of learning. In class A, 52% of the students say that individual learning is better for them, 22% are neutral, while 26% disagree. In class A, 65% of the students indicate that partner learning is better for them, 20% are neutral, while 15% disagree. In class A, 63% of the students claim that cooperative learning is better for them, 22% are neutral, whereas 15% would disagree. In class A, 76% of the students say that they like hands-on learning, 17% are neutral, whereas 7% disagree.

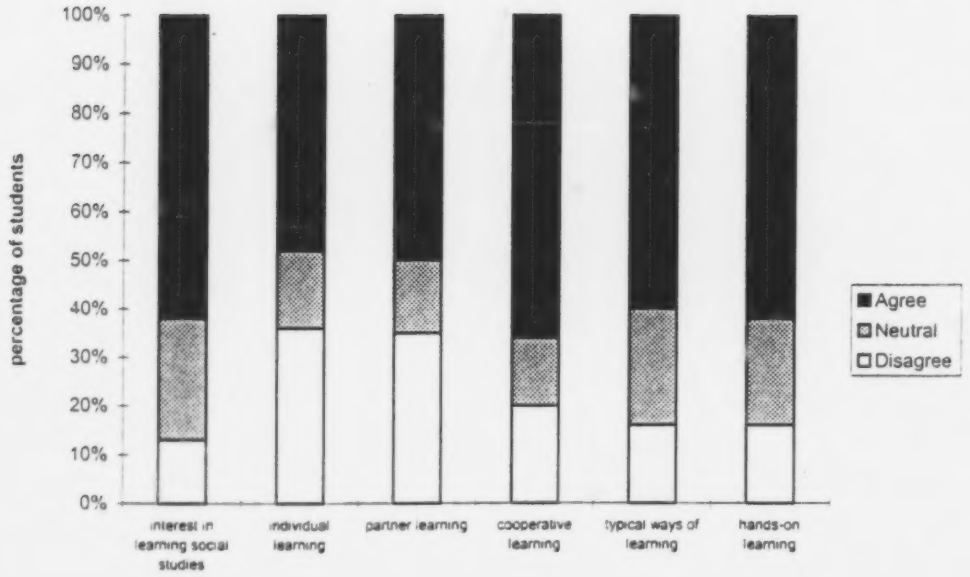


Figure 2. Social Studies pre-interest survey for class B, which has twenty-five students.

An analysis of Figure 2 indicates that in class B, 62% of the students have an interest in social studies, 25% of the students are neutral as to their interest in social studies, and 13% of the students have little or no interest in social studies at the fifth grade level. In class B, 48% of the students like the typical ways of learning, 16% of the students are neutral, and 36% do not like typical ways of learning. In class B, 50% of the students report that individual learning is better for them, 15% are neutral, while 35% disagree. In class B, 66% of the students say that partner learning is better for them, 14% are neutral, while 20% disagree. In class B, 60% of the students claim that cooperative learning is better for them, 24% are neutral, where as 16% would disagree. In class B, 62% of the students like hands-on learning, 22% are neutral, whereas 16% disagree.

The average of the students' social studies grades the previous year for class A were 4.4 on a 12 point scale, which represents a grade between a C and C-. In class B the average score in

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the previous year was 3.6 on a 12 point scale, which represents a grade between D+ and C-. This demonstrates that achievement in social studies was below average. Figure 3 below illustrates the 12 point scale used.

Table 1. 12 Point Grading Scale

| Grade | Assigned Value |
|---|---|
| A+ | 12 |
| A | 11 |
| A- | 10 |
| B+ | 9 |
| B | 8 |
| B- | 7 |
| C+ | 6 |
| C | 5 |
| C- | 4 |
| D+ | 3 |
| D | 2 |
| D- | 1 |
| E | 0 |

Low academic scores, as well as a lack of interest, was demonstrated in social studies by the fifth grade students. Low test scores from the pre-test and previous year's social studies grades are evidence of this as well as the pre-interest survey scores.

A teacher survey (Appendix A) was given to classroom teachers inquiring about their use of multiple intelligence in social studies. The results indicate that only 22% of the classroom teachers use multiple intelligence strategies. This demonstrates a lack of knowledge about multiple intelligence or the lack of desire to teach it.

## Probable Causes

Multiple intelligences is a theory developed by Dr. Howard Gardner. According to his theory there are eight intelligences: visual/spatial, bodily/kinesthetic, musical, interpersonal,

intrapersonal, and naturalist. Gardner believes that the eight intelligences are independent, in that they develop at different time and to different degrees in different individuals.

Attitudes of teachers, administrators and the community, achievement expectations, and curriculums are some obstacles to overcome. The negative attitudes of educators and non-educators in the community can prevent multiple intelligences from being taught in the classroom.

One problem that schools face is that their curriculums do not fit the multiple intelligence model. Many educators will categorize students on the basis of their standardized test scores. These scores claim to indicate the students' potential for achievement. It is also an easy way for educators to group or label students without really knowing them or what their strengths are (Weber, 1992).

A second problem with multiple intelligences fitting into the curriculum is the lack of authentic assessments readily available to educators. Since students come into the classroom with different skills and intelligences, "...it is impossible as well as impractical, for a teacher to accommodate every lesson to all learning styles found within the classroom" (Lazear, 1992, p. 2). Assessing these students, authentically, with all their differences, would be a great challenge and a tedious undertaking for many educators.

A third issue involves teacher training. "Teachers often don't know how to implement the theories in the classroom, and they recognize (correctly) that incorrect implementations of a theory can do more harm than good" (Sternberg, Torff, Grigorenko, 1998, p1). Multiple intelligence methods are difficult for many educators to institute. It is very laborious for these educators to create lessons in ways that match the varied strengths of the students (Granat, 1997). Educators should not measure intelligence solely through rote

memorization. Their job needs to go beyond identifying intelligence to developing ways to teach it in the classroom. "Educators must find ways to share that knowledge with the students themselves so that they will be able to use their skills in situations outside of our classrooms" (McClaskey, 1995, p. 5).

The final evidence of school curriculums not conforming to the multiple intelligence model is the lack of active learning in many schools. "Drill and practice is a monotonous, repetitive task" (Campbell, 1993, p. 2). In a great many schools, however, this is the norm. "Why do we not know if our students are talented in art, music, dance, athletic, mechanical repair, computer programming, or are creative in other non-traditional ways? It is because, like regular educators, we care only about competence in its more traditional bookish sense" (Poplin in Armstrong, 1988). "Classroom teachers spend too much time on paper-and-pencil activities and not enough time on active learning that engages the total individual (Armstrong, 1988, p. 1).

Besides school curriculum, the attitude of educators as well as the school culture can prevent all the intelligences being taught. As many educators can attest, teachers often become inflexible in their ways. They are satisfied with their teaching strategy and they do not want to change and they do not want to change. Teachers may also believe that interventions ... "hurt, rather than help scores on classroom, statewide, and nationally standardized tests that emphasize memory more than they do the sophisticated kinds of thinking required for some of these programs"(Steinberg, Torff, Grigorenko, 1998, p.1).

Additionally, the culture in which we live in plays an important role. "The cultural value placed upon the ability to perform certain tasks provides motivation to become skilled in those areas. Thus, while particular intelligences might be highly evolved in many people of one

culture, those same intelligences might not be developed in the individuals of another" (Gardner, 1983, p. 2). "The school systems in the West often focus on a narrow range of intelligence that involves primarily verbal/linguistic and logical/mathematical skills" (Dickinson, 1999, p. 1). Gardner agrees as he points out "...that western civilization has crafted a curriculum approach that limits intellectual growth for the majority of students." Furthermore, Gardner, in 1992, stated, "There are at least seven intelligences, of which only two, linguistic and logical/mathematical are prized in the West" (Weber, 1992, p. 2).

In comparing the literature to the investigation site the same problems and concerns exist. Changing a teaching style is an attitude that teachers, administrators, and the community must try to change in order to be beneficial. In the targeted building, teachers are working harder on including "learning disabled" children in regular classes and therefore, are working "harder" not "smarter" on how to teach these children. Unfortunately, using multiple intelligences as a teaching style is very difficult to incorporate as a tool to learning. Teachers have a difficult time in letting the students take charge of their learning in the style they will succeed as evidenced by the teacher survey.

# CHAPTER 3

# THE SOLUTION STRATEGY

## Literature Review

"When children have the opportunity to learn through their strengths, they may become more successful at learning all subjects—including the 'basic skills'" (Dickinson, 2000, p.1). There are many changes that need to take place before the multiple intelligences model can be taught. By experiencing how the multiple intelligence model works, teachers, administrators, and the community might find that their attitudes may change. "By broadening our view of intelligence, and valuing and nurturing abilities…we can open doors by using the strengths of children as a means of complementing their less developed areas" (Hine, 2001, p.3).

A study has shown that students had increased multi-modal skills, improved attitudes and behavior due to the use of a multiple intelligence model. A teacher remarked,

> …that due to the nature of the program, I developed different skills than I previously relied on when standing in front of a class lecturing each day. I began to observe my students from seven new perspectives. I began working with them rather than for them…I even began to wonder who was changing the most, my students or myself (Campbell, 1990, p.3).

Most students will not only have a better attitude about learning; they may also have a better chance of achieving. Students will be able to understand their own learning process because they will experience it. "Allowing students to use their knowledge about how they learn best can increase their enthusiasm, raise their achievement levels, and foster growth in their other intelligences" (Sweet, 1998, p.1).

When students find out what they can be successful at, they are able to develop strengths, interests, needs, and talents. "The beauty of incorporating Howard Gardner's eight intelligences into the classroom is that it allows for all children to learn through their strengths and to share their expertise" (Beckman, 2001, p.4). One of the biggest benefits to using the multiple intelligences model is that most students experience, and maybe even become proficient at, new intelligences. "Children can learn through their strengths and can articulate their individual talents while gaining literacy in several modes" (Campbell, 1993, p.4).

Changes can also occur in the school's curriculums to promote the use of multiple intelligences. "Instead of focusing on deficiencies—what kids can't do—education should be based on growth—how kids learn" (Armstrong, 1994, p.1). Children who are "learning different", are often labeled as learning disabled. Unfortunately, these children are often taught in a school where the curriculum is based around language arts and mathematical skills. Teachers need to find out what their students are successful at and help them develop their strengths in the classroom. This can benefit not only the "learning different", but "normal", and "gifted" children as well.

One way to achieve this in the classroom is to replace circle time and other whole group activities other more individualized activities such as centers. Teachers may feel that this would be difficult because they may fear losing control of their class. However, this approach can

enable the students to learn in a way that is comfortable for them. Ideas for centers can include a book nook (linguistic), a math/science lab (logical/mathematical), games/discussion area (interpersonal), open space for movement (bodily/kinesthetic), a listening lab (music), a quiet space (intrapersonal), and an art/media center (spatial). For the teacher who may feel overwhelmed by creating so many centers, "All a teacher has to do is teach seven different ways on seven different days. Thus, at the end of seven days, the teacher would have presented the skills through every child's strongest intelligence" (Armstrong, 1994, p.4).

By changing attitudes of students, teachers, administrators, and the community, as well as achievement expectations of students, it is possible to make certain that schools are given the option to teach the multiple intelligences model. Changing a school's or district's curriculum is not an easy task, but there are many benefits that would make it a worthwhile effort.

## Project Objectives and Processes

As a result of using multiple intelligences in the classroom, during the period of September 1, 2001 to December 1, 2001, the targeted fifth grade students will increase their achievement scores in social studies by five percent as measured by their final grade. As a result of using multiple intelligence in the classroom, during the period of September 1, 2001 to December 1, 2001, the targeted fifth grade students will increase their interest level by five points, as measured by the post interest survey.

In order to accomplish the project objectives, the following processes are necessary:

1. Create multiple intelligence unit and activities for social studies units on Native Americans and colonization. Teachers will need to research different ways to implement MI strategies.

2. Designate one class as the experimental group (Class A) and one as the control group (Class B)
3. Introduce to students in the experimental group the concept of multiple intelligences and how it will be implemented
4. Create a center to for each intelligence to allow students in experimental group to choose how they will learn
5. A rubric will be created at the beginning of each unit by the teacher researchers to evaluate student work. It will be used once a week for one assignment to see how well students' work in the experimental group (Class A) is improving.
6. Present content in a way that addresses the various intelligences to experimental group so children will want to learn and participate. This will improve teacher attitude as well.
7. Present content using direct teaching to the control group

Table 2. Project Action Plan

MI=multiple intelligences Experimental Group=Group A Control Group=Group B

| **Project Objectives'** | **Intervention** | **Targeted Group Behavior** | **Teacher/ Researcher Behavior** | **Materials** | **Time Frequency and Duration** |
|---|---|---|---|---|---|
| To increase students' achievement scores in social studies by 5%. | Develop materials, for Native American unit, using all eight multiple intelligences | None | Teacher/ researchers review and collect materials needed for teaching a MI unit for Native Americans. | Adopted textbook series and its support materials, If the Shoe Fits and Authentic Assessment. | August 2001 during a four day researchers' planning meeting |
| To increase students' achievement scores in social studies by 5%. | Develop materials, for colonization unit, using all eight multiple intelligences | None | Teacher/ researchers review and collect materials needed for teaching a MI for colonization | Adopted textbook series and its support materials, If the Shoe Fits, and Authentic Assessment. | August 2001 during a four day researchers' planning meeting |
| To increase students' achievement scores in social studies by 5%. | Develop centers, for Native Americans, using all eight multiple intelligences | None | Teacher/ researchers review and decide on centers for Native Americans. | Adopted textbook series and its support materials, If the shoe Fits, and Authentic Assessment. | August 2001 during a four day researchers' planning meeting |
| To increase students' achievement scores in social studies by 5%. | Develop centers for colonization unit, using all eight multiple intelligences. | None | Teacher/ researchers decide on centers for colonization | Adopted textbook series and its support materials, If the shoe Fits, and Authentic Assessment. | August 2001 during a four day researchers' planning meeting. |

| | | | | | |
|---|---|---|---|---|---|
| To increase students' achievement scores in social studies by 5%. | Administer MI test. (Group A) | Fifth grade students in group A take MI test. | Teacher/ researchers administers MI. | Multiple Intelligence test | Day one of the first week; as much time is needed. |
| To increase students' achievement scores in social studies by 5%. | Evaluate MI test. (Group A) | None | Teacher/ researchers evaluate MI test. | Multiple Intelligence rubric | Day one and two of the first week; as much time as needed. |
| To increase students' achievement scores in social studies by 5%. | Teach students about MI. (Group A) | Fifth grade students in group A learn about MI and their MIs. | Teacher/ researchers teach unit. | Background knowledge with the help of Howard Gardner's materials. | Day three of the first week; about one hour. |
| To increase students' achievement scores in social studies by 5%. | Administer Native American pretest. (Both groups) | Fifth grade students take the pretest. | Teacher/ researchers administer pretest. | Native American pretest. | Day four of the first week, for about 1 hour. |
| To increase students' achievement scores in social studies by 5%. | Evaluate Native American pretest. (Both groups) | None | Teacher/ researchers evaluate pretest. | Native American pretest answer key. | Day five and six of the first week. As much time as needed. |
| To increase students' achievement scores in social studies by 5%. | Teach MI unit on Native Americans. (Group A) | Fifth grade students in group A learn and complete activities from MI unit. | Teacher/ researchers teaches the MI unit. | MI unit on Native Americans. | Weeks 2-7 of the research project; about one hour four days a week |

| | | | | | |
|---|---|---|---|---|---|
| To increase students' achievement scores in social studies by 5%. | Teach unit on Native Americans. (Group B) | Fifth grade students in group B learn and complete work from unit being taught traditionally | Teacher/ researchers teach unit. | Adopted textbook series and its supporting materials. | Weeks 2-7 of the research project; about one hour four days a week |
| To increase students' achievement scores in social studies by 5%. | Evaluate student work, Native Americans, using a rubric. (Both groups) | None | Teacher/ researchers evaluate student work. | Rubric for evaluating student work. | Weeks 2-7 of the research project once a week; as much time as needed |
| To increase students' achievement scores in social studies by 5%. | Students being observed during classroom activities for Native Americans. (Both groups) | Fifth grade students in both groups will be working while the teacher/ researchers observe behavior. | Teacher/ researchers will observe the students. | Student observation checklist | Twice a week during a one hour social studies period. |
| To increase students' achievement scores in social studies by 5%. | Teacher/ Researcher being observed during classroom activities for Native Americans. | Teacher/ Researcher for Group A is being observed, while teaching MI activities. | Researchers will evaluate Teacher/ Researcher while she is teaching the MI unit. | Teacher Observation Checklist | Twice a week during a one hour social studies period. |
| To increase students' achievement scores in social studies by 5%. | Administer Native American posttest. (Both groups) | Fifth grade students in both groups will take the test. | Teachers/ Researchers will administer the test. | Native American test. | On the last day of week seven; as much time as needed by students |

| | | | | | |
|---|---|---|---|---|---|
| To increase students' achievement scores in social studies by 5%. | Evaluate Native American posttest. (Both groups) | None | Teacher/ researchers will evaluate the test. | Native American post-test answer key. | Week eight days one and two; as much time as needed |
| To increase students' achievement scores in social studies by 5%. | Administer Colonization pretest. (Both groups) | Fifth grade students in both groups will take the pretest. | Teacher/ researchers administer pretest. | Colonization pretest. | Day one of week eight; as much time as needed by students |
| To increase students' achievement scores in social studies by 5%. | Evaluate colonization pretest. (Both groups) | None | Teacher/ researchers evaluate pretest. | Colonization answer key. | Days three thru four of week eight; as much time as needed. |
| To increase students' achievement scores in social studies by 5%. | Teach MI unit on colonization. (Group A) | Fifth grade students in group A learn and complete activities from MI unit | Teacher/ researchers teaches the MI unit. | MI unit on colonization | Weeks 8-13 of research project, four days a week for about one hour. |
| To increase students' achievement scores in social studies by 5%. | Teach unit on colonization. (Group B) | Fifth grade students in group B learn and complete work from unit being taught traditionally | Teacher/ researcher teaches unit. | Adopted textbook series and its supporting materials | Weeks 8-13 of research project; four days a week for about one hour. |

| | | | | | |
|---|---|---|---|---|---|
| To increase students' achievement scores in social studies by 5%. | Students being observed during classroom activities for colonization. (Both groups) | Fifth grade students in both groups will be working while the teacher/ researchers observe behavior. | Teacher/ researcher will observe the students. | Student observation checklist. | Twice a week during a one hour social studies period. |
| To increase students' achievement scores in social studies by 5%. | Teacher/ Researcher being observed during classroom activities for colonization. | Teacher/ Researcher being observed during classroom activities for Native Americans. | Researchers will evaluate Teacher/ Researcher while she is teaching the MI unit. | Teacher observation checklist | Twice a week during a one hour social studies period. |
| To increase students' achievement scores in social studies by 5%. | Evaluate student work for colonization using a rubric. (Both groups) | None | Teachers/ researchers evaluate student work. | Rubric for student work | Weeks 8-13 of the research project, once a week as needed. |
| To increase students' achievement scores in social studies by 5%. | Administer Colonization posttest. (Both groups) | Fifth grade students in both groups will take the test. | Teachers/ researchers will administer the test. | Colonization test | On the last day of week 13; as much time as needed by students. |
| To increase students' achievement scores in social studies by 5%. | Evaluate colonization posttest. (Both groups) | None | Teachers/ researchers evaluate the test. | Colonization answer key. | Week 14, days one and two; as much time as needed. |

Table 3. Project Action Plan Two

| **Project Objectives'** | **Intervention** | **Targeted Group Behavior** | **Teacher/ Researcher Behavior** | **Materials** | **Time Frequency and Duration** |
|---|---|---|---|---|---|
| To increase students' interest level in social studies by five points | Administer social studies interest survey (Both groups) | Fifth grade students from both groups will complete the survey | Teachers/ researchers administer the survey | Social studies interest survey. | Day five of the week one; as much time as needed by students |
| To increase students' interest level in social studies by five points | Evaluate social studies interest survey. (Both groups) | None | Teachers/ researchers evaluates the survey | None | Days one and two of week two; as much time as needed |
| To increase students' interest level in social studies by five points | Students being observed during classroom activities for Native Americans. (Both groups) | Fifth grade students in both groups will be working while the teachers/ researcher observes behavior | Teachers/ researchers will observe the students | Student observation checklist | Twice a week during a one hour social studies period |
| To increase students' interest level in social studies by five points | Administer classroom climate survey for Native Americans. (Both groups) | Fifth grade students from both groups will complete the survey | Teachers/ researchers administer the survey. | Classroom climate survey for Native Americans | Once a week during weeks 2-7 of the research project |

| | | | | | |
|---|---|---|---|---|---|
| To increase students' interest level in social studies by five points | Evaluate classroom climate survey for Native Americans. (Both groups) | None | Teachers/ researchers evaluate the survey. | None | Days one and two of week eight; as much time as needed |
| To increase students' interest level in social studies by five points | Students being observed during classroom activities for Colonization (Both groups) | Fifth grade students will be working while the teacher/ researcher observe behavior | Teachers/ researchers observe the students | Student observation checklist | Twice a week during weeks 8-13 of the research project |
| To increase students' interest level in social studies by five points | Administer classroom climate survey for Colonization. (Both groups) | Fifth grade students in both groups will complete the survey. | Teachers/ Researchers administer the survey. | Classroom climate survey for Colonization. | Once a week during weeks 8-13 of the research project; as much time as needed by students. |
| To increase students' interest level in social studies by five points | Evaluate classroom climate survey. (Both groups) | None | Teachers/ researchers evaluate the survey. | None | Days one and two of week 14 of the research project. |
| To increase students' interest level in social studies by five points | Administer social studies interest survey. (Both groups) | Fifth grade students in both groups will complete the survey. | Teachers/ researchers administer the survey. | Social studies interest survey. | Day three of week 14 of the research project; as much time as needed by the students. |

| | | | | | |
|---|---|---|---|---|---|
| To increase students' interest level in social studies by five points | Evaluate social studies interest survey (Both groups) | None | Teachers/ researchers evaluate survey. | None | Days four and five of week 14 of the research project. As much time as needed. |

Methods of Assessment

The design method being used during the research project is a quasi experimental design of action research. The instruments being to conduct this research project are named below with a brief description of the process (Appendix B).

A pre and post-test will be given for each of the two social studies units that are created by both teacher researchers conducting the experiment. It will be given to the children in both class A and class B prior to starting the unit and then again at the end of the unit. There is one test for each unit of study. The student pre and post interest survey is to show student attitudes toward social studies. It will be given to prior to beginning the research study and then again at the end. The MI test is a test designed to identify each child's strongest intelligence. This will only be given to class A prior to starting the first unit of study. The teacher observation checklist will be used during the teaching of social studies, to ensure the teacher researcher is covering all multiple intelligences. Another teacher researcher who is involved with the study will do it once a week. The student observation checklist will be used by the teacher researchers to observe students' attitudes during social studies. This observation will take place during social studies twice a week for both groups. The classroom climate survey will be given once a week to both groups to see what students think about the activities.

# CHAPTER 4

# PROJECT RESULTS

## Historical Description of the Intervention

The objective of this project was to improve students' achievement and increase their interest in social studies by using various multiple intelligences. The targeted classrooms were comprised of two fifth grade elementary school classes. Class A was the experimental group and was taught using the multiple intelligence strategies. Class B was the control group. Interventions implementing multiple intelligences were selected to effect the desired changes.

The teaching of the multiple intelligences occurred at the beginning of the intervention for class A because the researchers determined these intelligences needed to be known prior to the students beginning the social studies unit. The learning of multiple intelligences included the students taking a multiple intelligence test that indicated each student's strongest intelligence.

A parent letter (Appendix A) was sent home at parent night informing the parents and/or guardians that the teacher-researchers were researching the possibility of using multiple intelligences while working academically in social studies. More than 96% of the parents were in favor of this and agreed that their children should participate. Many asked interested questions and some parents with children in the control group (Class B) expressed concern about their

child not getting the same caliber of education that the experimental class (Class A) would be receiving. They were consoled and agreed to the program.

The first phase of the action plan was to collect data to determine which facts about Native Americans the students knew and what their interest level was in social studies. This was accomplished by giving the participants in both classes a student pre-interest survey (Appendix A) the first week of school. The researchers noted that there seemed to be somewhat of an interest in social studies in both the control class and the experimental class.

The second step was to give a pre-test (Appendix A) developed by the researchers. The test contained matching questions, multiple-choice questions, and an essay question pertaining to Native Americans. This was given to both groups of students before the direct teaching of the Native American unit. The pre-test showed the students' knowledge of the social studies curriculum as opposed to the interest survey which showed what the students enjoyed or did not enjoy about social studies. It also indicated the areas students needed to work on to further develop knowledge of the Native Americans in social studies. The students were rated as mastery 100%-85%, partial mastery 84%-60%, and non-mastery 59%-0%. It was noted by the researchers that the average score on the pre-test was 41% in Class A, the experimental group and 27% in Class B, the control group.

The third phase of the intervention involved using Student Observation Checklists (Appendix B) while the students in class A were involved in classroom assignments. This was an on-going observation of the students to see if they were participating, on-task, volunteering, asking questions, and how they were working with other students. Marks of "frequently",

"sometimes", or "not yet" were given according to teacher observation. Student observations were done once each week.

Each week for 14 consecutive weeks, the teacher-researchers taught the Native American unit during social studies. Social studies was taught approximately two days per week for one hour each day. Because of extenuating circumstances such as the DARE (Drug awareness resistance education), social studies was not taught as often as planned. Therefore, the unit on Native Americans took longer than originally anticipated. The unit on colonization was not used for the research project as originally intended.

Activities in Class A varied. This was done to ensure that all intelligences were used and that each student had the opportunity to do assignments using their strongest intelligence. The students were also able to do activities in intelligences other than their strongest. This may benefit them as research has shown that exposure to intelligences which are not the student's strongest could lead to a more positive performance in those areas.

Class A began each social studies class period by doing an interactive bulletin board. This activity was done as a whole class and represented the visual/spatial intelligence. The bulletin board had an outline of what is now the United States. Each class period was started by members of a group putting color-coded pieces of the different regions where the Native Americans lived and what tribe actually lived there. This gave the students instant visual identification of the regions.

The interpersonal intelligence was represented by the group time taking place in class. The class was divided into five groups representing the five Native American regions: Northwest Coast, Southwest, Plains, Southeast Woodlands, and Northeast Woodlands. Each group was

responsible for researching the food the Native American tribe who lived in their region ate, what they wore, in what type of houses they lived, the crafts they did, and the weapons and tools they used. The whole group together could do this research, or they could choose to each investigate one part and share with the group what they found.

A five-paragraph essay was used to address the verbal/linguistic intelligence. The information found while researching with their group is what needed to be covered in their writing. The paper was graded based on the incorporation of all the required information and the usage of proper English conventions in their writing.

Students were able to build a model of the house in which the Native American tribe in their region would have lived. This activity addressed the bodily/kinesthetic learner because of the process of actually assembling something. It was also a beneficial activity for the naturalist intelligence because of the opportunity to use items from nature. The model could be made from any material. Some examples include natural materials such as mud, grass, sticks and rocks. Other materials could be found around the students' homes such as craft sticks, fabric, toothpicks and newspaper for making paper mache. The final products were displayed in the school's library.

After the information was found, the paper written, and the model built, the students gave a speech about what they had learned. The speech also required a visual aid: clothes, artifacts, poster, overhead, etc. This activity covered both verbal/linguistic and visual/spatial intelligences.

Centers occurred in Class A approximately every other week. Examples of centers included: listening to Native American music and legends on tape (intrapersonal and musical), Native American math games using sticks (mathematical/logical and bodily/kinesthetic), Native

American art such as dream catchers, totem poles and teepees (visual/spatial and bodily/kinesthetic), group work on the research and the paper (interpersonal), and creative writing such as symbol writing (verbal/linguistic).

Along with special activities, every day information was covered by students' jigsawing. Jigsawing involves each group of students learning a section of the text and presenting the information to the class. The group chose to present the information using any intelligence. Examples included games, songs, stories, or direct teaching. The rest of the class had the responsibility to pay attention, learn the material, and ask any questions if they did not understand. The teacher was there to supplement the information if necessary.

The final test for Class A included choices as well. For one question, the students were able to choose to compose a song, draw a picture, create a venn diagram, or write a short essay.

Students responded favorably to the various activities. One student wrote on their climate survey that they enjoyed learning about Native Americans because..."it was interesting to do the research and the interactive bulletin board". Another student wrote, "I wish we could do more activities like building houses".

Class B's curriculum centered on reading from the textbook and answering the questions at the end of the section or doing a worksheet. The class read aloud, silently, and both in class and at home. A student from this class commented on his climate survey, "I felt tired and exhausted because I didn't want to do social studies". The format of class B's post test was identical to the class A's test in format.

The project culminated in December, 2001, with a post- interest survey and a post-test (Appendix A) given to all the students who had been involved in the intervention. The results showed the gains in Class A's students had made in the amount that they enjoyed social studies.

Students from the Class B remarked, "I feel like I'm going to die", and that learning about Native Americans was..."boring because there wasn't anything interesting". Some students, however, enjoyed learning new things and remarked about the things they learned.

## Presentation and Analysis of Results

The teacher-researchers used multiple intelligence strategies in Class A to improve students' interest and achievement in social studies. The results were compared to Class B's interest and achievement at the end of the unit on Native Americans. The teacher-researchers used pre-tests and post-tests to compare achievement among classes. The post-tests were used to compare achievement between the two classes. Pre-interest and post-interest surveys were used to demonstrate decreases and increases in student interest levels. Climate surveys were used to demonstrate a positive increase in student attitudes. Observation checklists were used to demonstrate how student participation increased over this twelve-week period. A multiple intelligence test was given to demonstrate just how differently children learn. Lastly, a teacher observation checklist was used to make sure the teacher was implementing multiple intelligences in the unit. The following graphs and tables show in greater detail all of these methods and assessments.

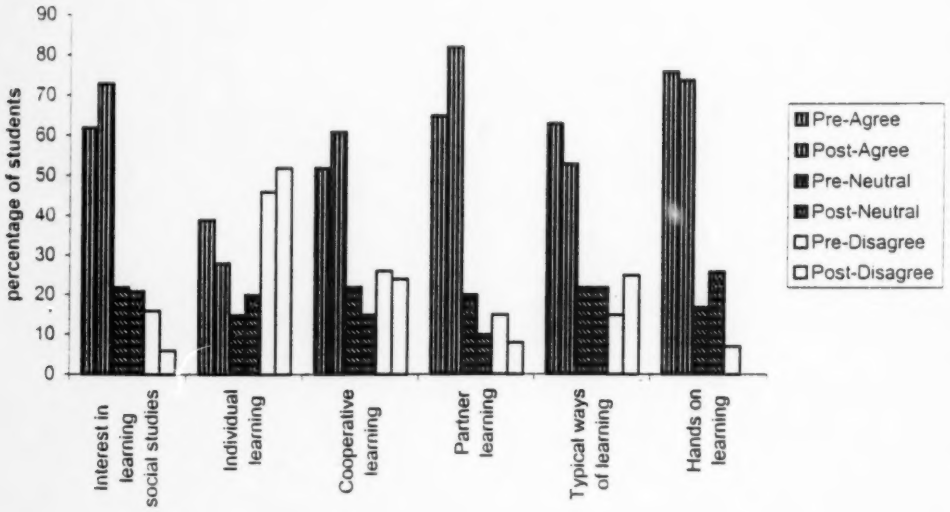


Figure 3. Pre and post comparison of student interest in learning social studies for Class A, experimental group.

Figure 3 illustrates the student agree, neutral, and disagree responses listed as percentages in the pre and post interest survey. In the pre-interest survey 62% of the students showed interest in learning social studies, whereas 73% showed interest in the post survey. In the pre-interest survey 22% of the students had a neutral response whereas on the post test 21% had a neutral response. On the pre-interest survey 16% of the students disagreed whereas in the post test survey 6% disagreed. In the pre-interest survey 39% of the students agreed that individual learning is better for them, whereas 28% agreed in the post survey. In the pre-interest survey15% of the students were neutral compared to 20% on the post survey. Forty-six percent of the students disagreed in the pre survey, whereas 52% disagreed in the post survey. In the pre-interest survey 52% of the students agreed that cooperative learning is better for them, whereas 61% agreed in the post survey. Twenty-two percent of the students were neutral on the pre-interest survey and 15% of the students were neutral on the post survey. In the pre-interest survey 26% of the students disagreed whereas in the post survey 24% of the students disagreed.

In the pre-interest survey 65% of the students agreed that partner learning is better for them, whereas 82% agreed in the post survey. On the pre-interest survey 20% were neutral and 10% of the students were neutral in the post survey. Fifteen percent of the students disagreed whereas in the post survey 8% disagreed. In the pre-interest survey 63% of the students agreed that typical learning is better for them, whereas 53% agreed in the post survey. In the pre-interest survey, 22% of the students were neutral and 22% were neutral on the post survey. Fifteen percent of the students disagreed, whereas in the post survey, 25% disagreed. In the pre-interest survey 76% of the students agreed that hands on learning is better for them, whereas 74% agreed in the post survey. Seventeen percent of the students were neutral on the pre interest survey and a 26% were neutral on the post survey. In the pre survey, 7% of the students disagreed, whereas in the post survey 0% disagreed.

An analysis of Figure 3 indicates, that when comparing pre and post-tests scores in Class A, the experimental group, interest in learning increased by 11%, neutral responses decreased by 6%, and students having little or no interest in social studies decreased by 8%. When comparing individual learning responses for Class A, Figure 3 indicates that there was an 11% decrease in the agree column, an increase of 5% in neutral responses, and a 6% increase the disagree column. When comparing cooperative learning responses for Class A, Figure 3 indicates there was a 9% increase in student responses that cooperative learning is better for them, a 7% decrease in neutral responses, and a 2% decrease in the disagree column. In Class A there was a 17% increase in students liking partner learning, a 7% decrease in neutral responses, and a 10% decrease in the disagree column. In Class A, there was a 10% decrease in students liking typical

ways of learning, and a 10% increase in students disliking typical ways of learning. There was no change indicated in the neutral column. In Class A, there was a 2% decrease when comparing pre and post-test scores in the agree column for hands on learning, 9% increase in neutral responses and a decrease of 7% in the disagree column.

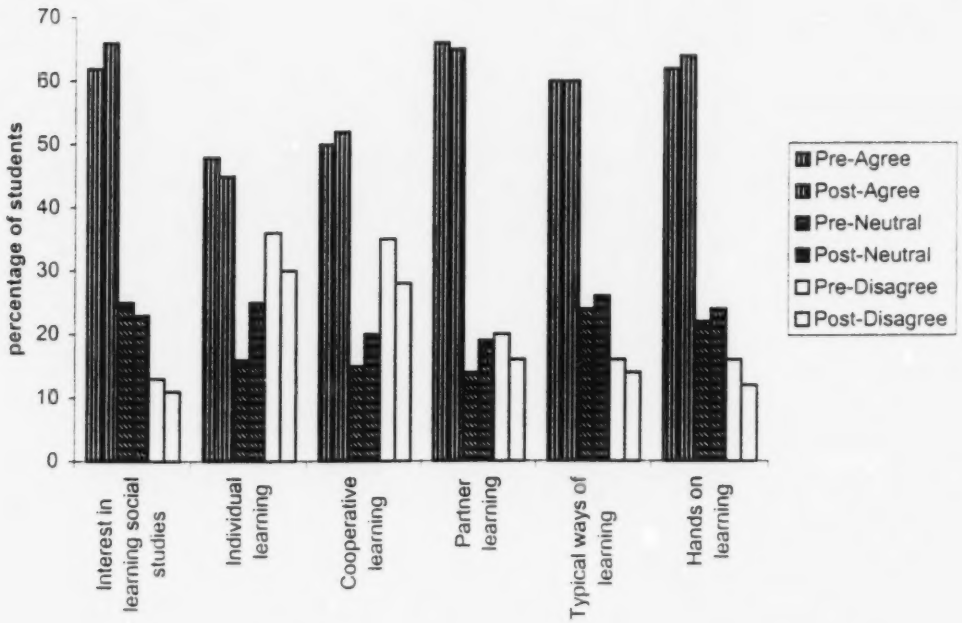


Figure 4. Pre and post comparison of student interest in learning social studies for Class B, control group.

Figure 4 illustrates the student agree, neutral, and disagree responses listed as percentages in the pre and post interest survey. In the pre-interest survey 62% of the students showed interest in learning social studies, whereas 66% showed interest in the post survey. In the pre-interest survey 25% of the students had a neutral response whereas on the post test 23% had a neutral response. On the pre-interest survey 13% of the students disagreed whereas in the post test survey 11% disagreed. In the pre-interest survey 48% of the students agreed that individual

learning is better for them, whereas 45% agreed in the post survey. In the pre-interest survey16% of the students were neutral compared to 25% on the post survey. Thirty-six percent of the students disagreed in the pre survey, whereas 30% disagreed in the post survey. In the pre-interest survey 50% of the students agreed that cooperative learning is better for them, whereas 52% agreed in the post survey. Fifteen percent of the students were neutral on the pre-interest survey and 20% of the students were neutral on the post survey. In the pre-interest survey 35% of the students disagreed whereas in the post survey 28% of the students disagreed. In the pre-interest survey 66% of the students agreed that partner learning is better for them, whereas 65% agreed in the post survey. On the pre-interest survey 14% were neutral and 19% of the students were neutral in the post survey. Twenty percent of the students disagreed whereas in the post survey 16% disagreed. In the pre-interest survey 60% of the students agreed that typical learning is better for them, whereas 60% agreed in the post survey. In the pre-interest survey, 24% of the students were neutral and 26% were neutral on the post survey. Sixteen percent of the students disagreed, whereas in the post survey, 14% disagreed. In the pre-interest survey 62% of the students agreed that hands on learning is better for them, whereas 64% agreed in the post survey. Twenty-two percent of the students were neutral on the pre interest survey and a 24% were neutral on the post survey. In the pre survey, 16% of the students disagreed, whereas in the post survey 12% disagreed.

An analysis of Figure 4 indicates, that when comparing pre and post-tests scores in Class B, the control group, interest in learning increased by 4%, neutral responses increased by 2%, and students having little or no interest in social studies decreased by 2%. When comparing individual learning responses for Class B, Figure 4 indicates that there was an 3% decrease in the

agree column, an increase of 11% in neutral responses, and a 6% increase the disagree column. When comparing cooperative learning responses for Class B, Figure 4 indicates there was a 2% increase in student responses that cooperative learning is better for them, a 5% increase in neutral responses, and a 7% decrease in the disagree column. In Class B there was a 1% increase in students liking partner learning, a 5% increase in neutral responses, and a 4% decrease in the disagree column. In Class B, there was no change noted in students liking typical ways of learning, a 2% increase in neutral responses, and a 2%decrease in the disagree column. In Class B, there was a 2% increase when comparing pre and post-test scores in the agree column for hands on learning, 2% increase in neutral responses and a decrease of 4% in the disagree column.

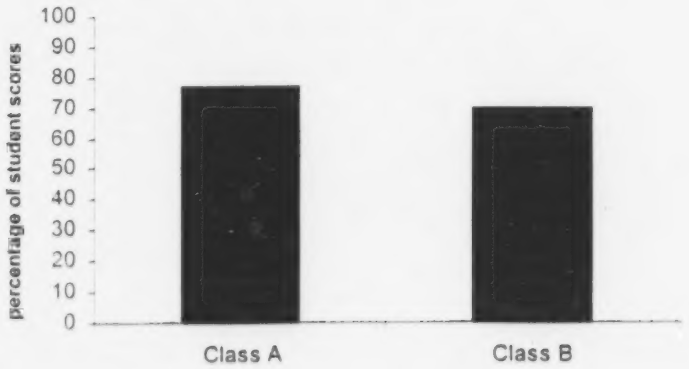


Figure 5. A comparison of post- test scores for both classes.

Figure 5 indicates post- test scores for Class A, the experimental group, and Class B, the control group. An analysis of the graph indicates that Class A has an average test score of 77% where as Class B has an average of 70%. There was an effect size of .34, which indicates that the experiment was mildly successful.

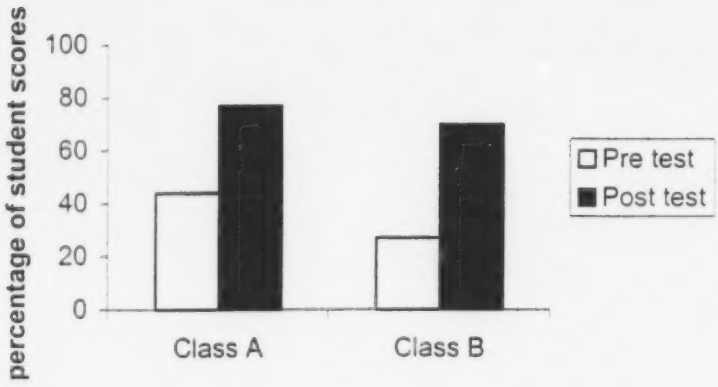


Figure 6. Comparison of the pre-test and post- test scores for Class A, and Class B.

Figure 6 illustrates pre-test and post-test scores for Class A, the experimental group and Class B, the control group. On the pre-test Class A scored a mean of 44%, whereas on the post-test Class A scored a mean of 77%. On the pre-test Class B scored a mean of 27% whereas, on the post-test Class B scored a mean of 70%.

Figure 6 indicates that the average class score had increased 33% for Class A, and 30% for Class B. This shows an improvement in both Class A and Class B, however, Class B showed a greater improvement.

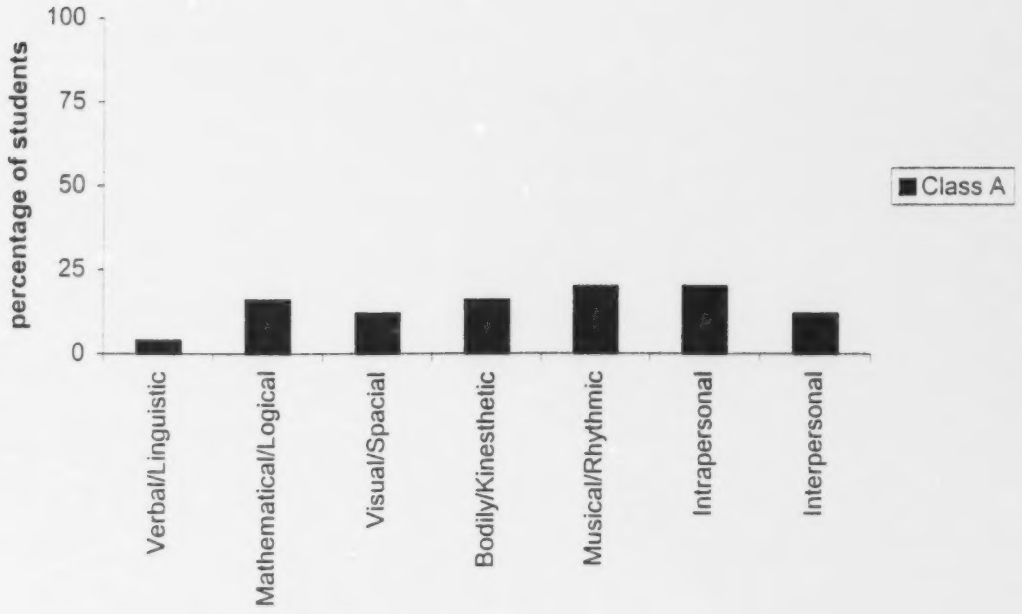


Figure 7. Dominant intelligence for the twenty-five students in Class A, the experimental group.

Figure 7 indicates that in Class A, the experimental group, there are a wide variety of intelligences being used. In social studies, the main intelligence that a teacher teaches in is verbal/linguistic. Figure 7 indicates that 98% of the students have a dominant intelligence in something other than verbal/linguistic. The first bar indicates that only 4% of the students in Class A have a dominant intelligence in verbal/linguistic. The second bar indicates that 16% of the students have a dominant intelligence in mathematical/logical. The third bar indicates that 12% of the students have a dominant intelligence in visual/ special. The fourth bar indicates that 16% of the students have a dominant intelligence in bodily/kinesthetic. The fifth bar indicates that 20% of the students have a dominant intelligence in musical/rhythmic. The sixth bar indicates that 20% of the students have a dominant intelligence in intrapersonal. The seventh bar indicates that 12% of the students have a dominant intelligence in interpersonal. An analysis of

these percentages demonstrates that the need for multiple intelligence activities in order to meet the needs of all students.

Table 4. Teacher Observation Checklist

| Observations | Percentage of use |
|---|---|
| Using MI Strategies | 83% |
| Gives guidance | 50% |
| Circulates | 100% |
| Observes Students | 100% |
| Number of MI's observed/class | 54% |

Table 4 illustrates how the teacher in class A, the experimental group, is managing the classroom. An analysis of table 4 indicates that the teacher used MI strategies 83% of the time, gave guidance 50% of the time, circulated around the classroom 100% of the time, observed students 100% and used 54% of the MI strategies per class period. These percentages represent the mean of 12 observations.

Table 5. Percent of observed time that students engaged in behavior during the Native American unit in Class A (experimental group).

| Observed behaviors | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 | Week 9 | Week 10 | Week 11 | Week 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Participates | 32 | 48 | 56 | 68 | 88 | 76 | 100 | 100 | 96 | 96 | 100 | 100 |
| On-task | 64 | 80 | 100 | 100 | 92 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Listens to others | 88 | 100 | 88 | 76 | 96 | 100 | 100 | 96 | 100 | 100 | 100 | 100 |
| Asks questions | 56 | 76 | 56 | 64 | 75 | 92 | 100 | 100 | 75 | 80 | 100 | 100 |
| Volunteers | 52 | 80 | 60 | 60 | 80 | 88 | 96 | 100 | 68 | 80 | 100 | 100 |
| Works well with others | 92 | 100 | 100 | 100 | 96 | 100 | 100 | 100 | 88 | 88 | 100 | 100 |

Table 5 illustrates student behaviors observed during one social studies class per week. An analysis of Table 5 indicates that over the 12 weeks student participation increased 68%, on-task behavior increased 36%, listening to others increased 12%, asking questions increased 44%, volunteering increased 48%, and students working well with others increased 8%. Class A has 25 students.

Table 6. Percent of observed time that students engaged in behaviors during the Native American unit in Class B (control group).

| Observed behaviors | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 | Week 9 | Week 10 | Week 11 | Week 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Participates | 0 | 0 | 45 | 100 | 29 | 75 | 79 | 70 | 0 | 0 | 100 | 70 |
| On-task | 45 | 63 | 29 | 100 | 37 | 62 | 62 | 70 | 33 | 29 | 54 | 66 |
| Listens to others | 0 | 54 | 0 | 33 | 16 | 91 | 70 | 66 | 20 | 20 | 58 | 75 |
| Asks questions | 41 | 54 | 50 | 66 | 20 | 83 | 70 | 70 | 29 | 25 | 41 | 63 |
| Volunteers | 0 | 45 | 0 | 4 | 25 | 95 | 41 | 58 | 20 | 0 | 0 | 70 |
| Works well with others | 0 | 0 | 0 | 12 | 4 | 4 | 62 | 70 | 0 | 12 | 37 | 50 |

Table 6 illustrates student behaviors observed during one social studies unit per week. An analysis of the Table 6 indicates that over the 12 weeks participation increased 70%, on-task behavior increased 21%, listening to others increased 75%, asking questions increased 21%, volunteering increased 70%, and working well with others increased 50%. Class B has 24 students.

Table 7. Student attitudes toward learning social studies for Class A, the experimental group, by percent of group.

| | Week 1 | Week 3 | Week 5 | Week 7 | Week 9 | Week 11 |
|---|---|---|---|---|---|---|
| Negative Response | 52 | 48 | 36 | 32 | 20 | 20 |
| Neutral Response | 28 | 32 | 28 | 28 | 24 | 12 |
| Positive Response | 20 | 20 | 36 | 40 | 56 | 68 |

Table 7 indicates the student's attitudes toward learning social studies increased as the research progressed. The surveys were given every other week. An analysis of table 7 indicates

that negative responses decreased by 32%, neutral responses decreased by 16%, and positive responses increased by 48% over a twelve-week period. By the end of the research over half of the class had a positive attitude toward social studies whereas, in the beginning it was the complete opposite.

Table 8. Student attitudes toward learning social studies for Class B, the control group, by percent of group.

| | Week 1 | Week 3 | Week 5 | Week 7 | Week 9 | Week 11 |
|---|---|---|---|---|---|---|
| Negative Response | 50 | 41 | 45 | 62 | 75 | 66 |
| Neutral Response | 37 | 41 | 33 | 20 | 12 | 16 |
| Positive Response | 13 | 18 | 22 | 18 | 13 | 18 |

Table 8 indicates the student's attitudes toward learning social studies did not have a significant change. The surveys were given every other week. An analysis of table 8 indicates that negative responses increased by 16%, neutral responses decreased by 21%, and positive responses increased by 4% over a twelve-week period. The students' attitude toward social studies was not impacted during the research period, because the classroom environment was the same as it had always been.

## Conclusions and Recommendations

Based on the presentation and analysis of the data on improving students' knowledge and interest in social studies, the students showed marked growth. The use of multiple intelligences provided the necessary structure for the researcher's activities. Post-observation results also indicated that substantial gains had been made in improving the targeted students' learning behaviors during class activities.

Students need to be aware that people learn differently and have their own strengths and weaknesses. Experience and research show that students learn best when doing activities that are enjoyable to them.

An important job of teachers is to meet the needs of each student. This task is one that has been up to the individual teacher to discover. Each child is unique in the way they learn and what they enjoy. Once their needs are identified, an educator is able to tailor a program that will work best for each child.

The teacher-researchers feel that one way to meet the needs of children are to help them find activities they enjoy and ones in which they can excel. One of the procedures to make this happen is to identify the students' strongest intelligence. This can be done by administering a multiple intelligence test to the students and then creating activities in which students have a chance to succeed in their strong intelligences.

The students learned they needed to depend on each other during group activities. Students whose intelligence was strongest in bodily/kinesthetic, for instance, may need to assist others during a model-building activity. A student with a high score in the interpersonal intelligence may help other group members to communicate with each other.

Students were observed once per week for the desired skills used during activities such as if the student participates, if they are on task, listening to others, asking questions, volunteering, and how well they work with group members.

The student observation checklist was originally going to be done twice per week. This proved unreasonable because the number of days social studies was taught was reduced from the intended four to two. This was due to other curricular activities that occurred in the beginning of

the year such as the drug awareness resistance education (DARE). In a situation where social studies is taught four to five times per week, two observations may be prudent.

A rubric to grade weekly activities was initially planned to assess student achievement. This tool, however, was nonessential in the experiment and was not used. The teacher-researchers recommend the rubric be used as an optional tool if so desired by the interventionist.

For teachers desiring to implement a program using multiple intelligences, the teacher researchers recommend carefully organizing the different activities in advance. Beginning the intervention at the start of the school year would be a benefit to both the teacher and the students, since, as teachers know, routines are important to children.

One disadvantage to the intervention was the amount of time needed to implement the activities. From the initial multiple intelligence test, to the climate surveys and observations, to the actual creation of the multiple intelligence activities, the quantity of time needed is tremendous. Prior planning is essential for this endeavor.

The rationale cited here are some of the reasons why the researchers decided that using multiple intelligences would be a suitable way to teach social studies to fifth-grade students. The results have assured the teacher-researchers that the benefits of using multiple intelligence strategies increase student achievement and interest in social studies versus not using multiple intelligence strategies. When students are successful, their enjoyment of the subject increases leading to better achievement grades and higher self-esteem.

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Appendix A

Parent Letter
Consent to Participate
Social Studies Pre/Post-Interest Survey
Seven Multiple Intelligences Quiz
Scoring of the Quiz
Native American Test: You Know About Native Americans Test
Multiple Intelligence Survey

## Consent to Participate in a Research Study
### Improving Student Interest and Achievement in Social Studies

I,_____, the parent/legal guardian of the minor named below, acknowledge that the researcher has explained to me the purpose of this research, identified any risks involved, and offered to answer any questions I may have about the nature of my child's participation. I freely and voluntarily consent to my child's participation in this project. I understand all information gathered during this project will be completely confidential. I also understand that I may keep a copy of this consent form for my own information.

**Name of Minor:**_____

_____

Signature of Parent/Legal Guardian Date

# Consent to Participate in a Research Study
## Improving Student Interest and Achievement in Social Studies

Dear Parent or Guardian,

We are currently enrolled in a master's degree program at Saint Xavier University. This program requires me to design and implement a project on an issue that directly affects my instruction. I have chosen to examine the affects of using Multiple Intelligence in Social Studies.

The purpose of this project is to decide if teaching multiple intelligence will improve learning. It will help your student gain interest and increase academic performance.

We will be conducting our project from September 1, 2001to December 1, 2001. The activities related to the project will take place during regular instructional delivery. The gathering of information for our project during these activities offers no risks of any kind to your child.

Your permission allows us to include your student in the reporting of information for our project. All information gathered will be kept completely confidential, and information included in the project report will be grouped so that no individual can be identified. The report will be used to share what I have learned as a result of this project with other professionals in the field of education.

Participation in this study is completely voluntay. You may choose to withdraw form the study at any time. If you choose not to participate, information gathered about your student will not be included in the report.

If you have any questions or would like further information about our project, please contact one of us at school.

If you agree to have your student participate in the project, please sign the attached statement and return it to us. We will be happy to provide you with a copy of the statement if you wish.

Sincerely,

Christine Hanley  Carmen Hermiz  Jennifer Peddy  Valerie Levine

# Social Studies Pre/Post-Interest Survey

**Name**_____ **Date**_____

**Answer the following questions using the following scale:**

**1-Strongly Agree 2-Agree 3-Nuetral 4-Disagree 5-Strongly Disagree**

1. Social Studies is interesting. _____
2. I like learning about how our country began. _____
3. I like learning about geography. _____.
4. I like learning about different cultures. _____
5. The hardest things about social studies are remembering facts, dates, and places. _____
6. I learn the best when I work alone. _____
7. I learn the best when I work with a partner. _____
8. I learn the best when I work with a group and we each do the job we are best at. _____
9. Learning social studies is fun and interesting to me when we do projects. _____
10. Reading the book to find out information is easy for me. _____
11. Working in groups makes me feel uncomfortable. _____
12. Working alone makes me feel sad. _____
13. I learn more when the material has been covered in different ways. _____
14. I study best when I can study with a partner. _____
15. Being lectured and then answering questions is a great way for me to learn. _____
16. Finding out information with a group of my peers is exciting for me. _____
17. I like Social Studies. _____

**Student's names and identities will be kept confidential*

## 7 Multiple Intelligences
### Where does your true intelligence lie?

This quiz will help you identify your areas of strongest intelligence. Read each statement. If it expresses some characteristic of yours and sounds true for the most part, write a "T." If it doesn't, mark an "F."

1. I'd rather draw a map than give someone verbal directions.
2. If I am angry or happy, I usually know exactly why.
3. I can play (or used to play) a musical instrument.
4. I can associate music with my moods.
5. I can add or multiply quickly in my head.
6. I can help a friend sort out strong feelings because I successfully dealt with similar feelings myself.
7. I like to work with calculators and computers.
8. I pick up new dance steps fast.
9. It's easy for me to say what I think in an argument or debate.
10. I enjoy a good lecture, speech or sermon.
11. I always know north from south no matter where I am.
12. I like to gather together groups of people for parties or special events.
13. Life seems empty without music.
14. I always understand the drawings that come with new gadgets or appliances.
15. I like to work puzzles and play games.
16. Learning to ride a bike (or skates)was easy.
17. I am irritated when I hear an argument or statement that sounds illogical.
18. I can convince other people to follow my plans.
19. My sense of balance and coordination is good.
20. I often see patterns and relationships between numbers faster and easier than others.
21. I enjoy building models (or sculpting).
22. I'm good at finding the fine points of word meanings.
23. I can look at an object one way and see it turned sideways or backwards just as easily.
24. I often connect a piece of music with some event in my life.
25. I like to work with numbers and figures.
26. I like to sit quietly and reflect on my inner feelings.
27. Just looking at shapes of buildings and structures is pleasurable to me.
28. I like to hum, whistle and sing in the shower or when I'm alone.
29. I'm good at athletics.
30. I enjoy writing detailed letters to friends.
31. I'm usually aware of the expression on my face.
32. I'm sensitive to the expressions on other people's faces.
33. I stay "in touch" with my moods. I have no trouble identifying them.
34. I am sensitive to the moods of others.
35. I have a good sense of what others think of me.

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## Scoring

Under each of the 7 multiple intelligence headings is a list of numbers. The numbers aren't in chronological order. Check back on your answers that correspond only with those numbers. Only count your answer if you marked a "T". How many times did you mark a "T" in each category? Write that number.

| | | | |
|---|---|---|---|
| A. | Verbal / Linguistic | (9,10,17, 22, 30) | ____ |
| B. | Mathematical / Logical | (5, 7, 15, 20, 25) | ____ |
| C. | Visual / Spatial | (1, 11, 14, 23, 27) | ____ |
| D. | Bodily /Kinesthetic | (8,16,19,21,29) | ____ |
| E. | Musical / Rhythmic | (3, 4,13, 24, 29) | ____ |
| F. | Intrapersonal | (2, 6, 26, 31, 33) | ____ |
| G. | Interpersonal | (12, 18, 32, 34, 35) | ____ |

Scoring -
This will show how well you learn in each of the 7 multiple intelligences. You scored a 1-5 in each category in this rubric. The meanings are these:

5 =very high - your prime learning style

4 = high - you learn very well in this manner also

3 = average - you are strong in this category

2 =somewhat below average - this is not a major strength

1 =below average - you probably don't like learning in this style

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# You Know About Native Americans

**Name**_____

Please try to do your best to answer the questions. Take your time and answer the questions carefully. You are well prepared for this and will do very well. Don't worry you have the knowledge to complete this task.

**Part One**: Match the house to the correct definition. You will receive one bonus point for giving me the region it is found in.

| **Regions** | | | **Houses** | | |
|---|---|---|---|---|---|
| *Northwest* | *Plains* | *Southwest* | *Teepee* | *Longhouse* | *Pueblo* |
| *Eastern Woodlands* | *Southeast* | | *Igloo* | *Lodge* | |

1. A cone-shaped tent made of animal skins.

   House_____ Region_____

2. An apartment-style home made out of adobe clay.

   House_____ Region_____

3. A home covered with grasses, sticks, and soil.

   House_____ Region_____

4. A long building made of poles covered with sheets.

   House_____ Region_____

5. A house made of blocks of ice.

   House_____ Region_____

**Part Two:** Multiple choice. Please read all choices carefully and then choose the best answer. There is only one correct answer. 54

1. Most early civilizations first began to develop when_____.

   a. farmers grew a surplus food
   b. peoples stopped warring with their neighbors
   c. builders learned how to make tall monuments
   d. people created written language

2. The Aztec planned their capital city to honor_____.

   a. their ancestors
   b. the Maya
   c. their priests
   d. the sun and their gods

3. Which part of the United States was once populated by the Mound Builders?

   a. Northeast
   b. Along the Mississippi
   c. Pacific Coast
   d. Southwest

4. The first piles of earth built by the Mound Builders were made to_____.

   a. store valuable objects
   b. celebrate religious events
   c. bury the dead
   d. grow crops

5. Archaeologist have discovered many Anasazi artifacts because_____.

   a. the Anasazi were better craftsworkers than other early Americans
   b. the Anasazi buried many of their artifacts in damp clay
   c. the arid climate helped preserve their objects
   d. the Anasazi still live in most of their ancient villages

6. What did the Hopi use to build their homes? 55

   a. adobe
   b. wood
   c. animal skins
   d. straw and twigs

7. The Iroquois lived in _____.

   a. Pueblo
   b. teepees
   c. longhouses
   d. lodges

8. When the Native Americans of the Plains stopped living in permanent settlements, their main source of food became_____.

   a. salmon
   b. buffalo
   c. corn
   d. deer

9. What happened as a result of the 1921 Alaska Native Claims Settlement Act?

   a. Russia received overdue payment for the 1867 purchase of Alaska.
   b. The Tlingit regained control of millions of acres of their lands.
   c. The Tlingit sold their fishing rights for millions of dollars
   d. Native Americans were forced to move inland from the West Coast.

10. At a Tlingit potlach the role of the host is to _____.

   a. solve arguments through comprise
   b. create dolls honoring visiting spirits
   c. receive honor in the form of money
   d. give gifts to all of the guests

**Part Three:** Compare and Contrast your way of life to Native Americans way of life. Include things such as, food and how they got it, weapons and use, houses, arts and crafts, music, games, and beliefs about nature. You may choose from one of the ways below to do so.

Write a poem

Make a Venn Diagram

Write a song

Draw a picture of both in detail.

Your own idea approved by me

Do you use MI strategies when teaching social studies?



| Room = | Yes | No |
|---|---|---|
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Appendix B

Teacher Observation Checklist
Student Observation Checklist
Classroom Climate Survey

# Teacher Observation Checklist



+ = Strong Evidence  ! = Some Evidence  / = No Evidence

| Observations | Using MI Strategies | Gives Guidance | Circulates | Observes Students | # of MI's seen today | Comments |
|---|---|---|---|---|---|---|
| Date: | | | | | | |
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| Date: | | | | | | |

**Teacher's name and identity will be kept confidential*

# Student Observation Checklist

Teacher Name_____ Date_____

+ = Frequently ! = Sometimes / = Not Yet

| Names | | | | | | | Comments |
|---|---|---|---|---|---|---|---|
| 1. | | | | | | | |
| 2. | | | | | | | |
| 3. | | | | | | | |
| 4. | | | | | | | |
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| 23. | | | | | | | |
| 24. | | | | | | | |
| 25. | | | | | | | |
| 26. | | | | | | | |

# Classroom Climate Survey

Name_____ Week_____

1. This week in Social Studies I felt.....

2. Learning about the Thirteen Colonies this week was.....Why?

3. The most interesting thing I have learned this week is.....

4. My favorite activity this week was.....

5. I wish we could do things like.....

**Students names and identities will be kept confidential*

# Appendix C

## Multiple Intelligences Native American Lesson Plans

ON YOUR OWN
UNIT PLAN USING MULTIPLE INTELLIGENCES GRID

Unit: Native American
Subject Area: Social Studies

Grade level: 5
Timeline: 9 weeks

Major Goals of Unit:
1. Students will be able to analyze the effects of NW enviornment.
2. Evaluate technology, art, and social ceremonies
3. Describe the most prevalent way of life among the Native Americans.

State Standard: #16 Understand events, trends, individuals, and movements shaping the history of Illinois, the United States, and other nations.

| VERBAL LINGUISTIC | LOGICAL MATHEMATICAL | VISUAL SPATIAL | BODILY KINESTHETIC |
|---|---|---|---|
| Shared reading of Annie and the Old one.<br><br>Brother Eagle Sister Sky | Create Dream Catchers<br><br>Mapping of Regions<br><br>Complete Buffalo Facts | Video- Native American series<br><br>Create a Venn Diagram between the Natives and your family | Perform Rain Dance<br><br>Compete in Native American Animal Races |
| **MUSICAL RHYTHMIC** | **INTERPERSONAL** | **INTRAPERSONAL** | **NATURALIST** |
| Make Rasps musical instruments of various kinds | Create tribe name for group<br><br>Daily writing topics- share group talk | Journal- Life as a Native American<br><br>Picture Writing | Field trip to Schingothee Museum |

1. Whole-class learning experiences:

| | | | |
|---|---|---|---|
| Read novel Annie and the Old One | Cooperation skills | Group region project report | Complete 12 projects from unit |

2. Whole-class assessment for learning experiences:

| | | | |
|---|---|---|---|
| End of book test- Teacher created | Observation | Rubric to assess | Rubric to assess |

3. Culminating event for unit:

| |
|---|
| Region Project Exhibition- Display and present to class |



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# Make Your Own

**Lesson Name**: Our Tribe Name

**Targeted Intelligence**: Interpersonal

**Supporting Intelligences**: Verbal/Linguistic, visiual/Spatial

**Thinking Skills**: Generating ideas

**Social skills**: Teamwork, encouraging

**Content Focus**: Role of cooperative group work

**Materials**: Markers, crayons, posterboard

**Task Focus**: Students will work together to create a name for their group of 6. They will then decorate it with pictures. The tribe name should have meaning connecting all of the group members.

**Product:** Posterboard

**Problem**: How to learn cooperative roles and responsibilities

**Activity**: The students will select a tribe name for their group of 6. They will then decorate the poster with pictures. The name should have meaning to them.

**Reflections**: 1. How does this new name make you feel?
2. What part of the poster represents you?
3. How will doing this activity help with cooperation in a group?



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Lesson Name: Rasps

Targeted Intelligence: Musical/Rhythmical

Supporting Intelligences: Bodily/Kinesthetic, interpersonal

Thinking Skills: Following directions

Social Skills: Cooperation, listening, synchronized moves

Content Focus: Musical rhythms

Materials: Piece of corrugated cardboard carton and a small stick or pencil.

Task Focus: This is a following directions activity that the students can do it in pairs.

Product: A completed working Rasps

Problem: Following directions

Activity: The Sioux used the Rasps to create an angry bear growl. The students will follow directions in making and using a rasps to imitate the bear spirit.

Reflections:

1. How does hearing the bear growl make you feel?
2. What instrument would you have liked to learn to play?
3. How does listening to music make you feel?

Lesson Name: Rasps

Targeted Intelligence: Musical/Rhythmical

Supporting Intelligences: Bodily/Kinesthetic, interpersonal

Thinking Skills: Following directions

Social Skills: Cooperation, listening, synchronized moves

Content Focus: Musical rhythms

Materials: Piece of corrugated cardboard carton and a small stick or pencil.

Task Focus: This is a following directions activity that the students can do it in pairs.

Product: A completed working Rasps

Problem: Following directions

Activity: The Sioux used the Rasps to create an angry bear growl. The students will follow directions in making and using a rasps to imitate the bear spirit.

Reflections:

1. How does hearing the bear growl make you feel?
2. What instrument would you have liked to learn to play?
3. How does listening to music make you feel?

# Make Your Own

**Lesson Name**: Dear Chief Seattle

**Targeted Intelligence**: Verbal Linguistic

**Supporting Intelligences**: Interpersonal, Naturalists

**Thinking Skills**: Recalling detail, main ideas

**Social Skills**: Listening, written communication

**Content Focus**: Language arts

**Materials**: Book- Brother Eagle, Sister Sky, notebook paper for each student

**Task Focus**: This activity will help students become active listeners and better

written communication skills

**Product:** A final letter to Chief Seattle

**Problem**: What happens when people mistreat the environment

**Activity**: The teacher will read the story- Brother Eagle, Sister Sky and then the students will write a letter to Chief Seattle telling him about the environment. They will also draw a picture to illustrate what was in the letter.

**Reflections**: 1. What would the environment be like if people would not take care of it?
2. What could you do to help make a better environment?
3. What is the most important part of the environment to you that needs to be taken care of? Why?

# Make Your Own

**Lesson Name**: My Life

**Targeted Intelligence**: Visual Spatial

**Supporting Intelligences**: Verbal/Linguistic, Intrapersonal

**Thinking Skills**: Interpertaion, classifiying

**Social Skills**: Cooperation, active listening, ownership and accountability

**Content Focus**: Language arts, social studies

**Materials**: Venn diagram template, Native American facts, 3 different color pens

**Task Focus**: Students will identify and compare facts about their lives compared to Native American children's lives

**Product:** Completed Venn Diagram

**Problem**: Comparing life of today to life of long age

**Activity**: The students will work in groups of 4 to compare their family lives with a family life style of a Native American in the past. They will use 3 different color pens to easily see the comparison and similarities.

**Reflections**: 1. What would you do differently if you were living the life of a Native American child?
2. How is your life better or worse today?
3. What are you most grateful for in your life now?

# Make Your Own

**Lesson Name**: Buffalo Facts

**Targeted Intelligence**: Logical/ Mathematical

**Supporting Intelligences**: Verbal/Linguistic, Interpersonal

**Thinking Skills**: Reasoning, problem solving

**Social skills**: Team work, cooperation

**Content Focus**: Mathematics

**Materials**: Worksheet page 47

**Task Focus**: The students will make a connection between a math problem and a fact on buffalo

**Product:** Completed page 47 with 85% accuracy

**Problem**: To solve various math problems and gain facts on buffalo

**Activity**: The students will work in pairs and solve the problems on the page. When they are done they will have gained knowledge about the buffalo, which were very important to the Native Americans.

**Reflections**: 1. What was the most interesting fact you learned?
2. What was the hardest problem to solve and why?
3. What did you already know about the buffalo?